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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/763,528

Applicant(s)

COLBECK ET AL.

Examiner

Mark D. Fearer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/12/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement submitted on 12 April 2004 has been considered by the Examiner and made of record in the application file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 11-13, 16-18, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Midgley et al. (US 20030074378 A1).

Consider claims 11, 16 and 24. Midgley et al. discloses a method for managing data in a grid computing environment, the method comprising: providing a graphical user interface configured to facilitate invocation of data replication operations by a user including directory-based replication operations ((“The replicated data structure 54 also provides directories, subdirectories and data records.”) paragraph 0040); invoking a replica location service associated with a grid ((“The database can include pointers to the location of the different versions of the target files on the tape, thereby providing more rapid access to the location on the tape that includes the information a user may want to restore.”) paragraph 0041); and conducting the data replication operations in response to selections on the graphical user interface by the user ((“This system can provide a user interface that will allow the user to select a network consumption limit that is representative of the users selected limit for the amount of network bandwidth to be allocated to the backup replication process and the agent process.”) paragraph 0019).

Consider claims 12 and 17. Midgley et al. discloses a method comprising accessing at least one replica location index ((“Additionally, in an optional environment the systems may include a catalog process that can record metadata that is representative of the locations of the versions of the target files on the storage medium to thereby create an index for accessing these versions of the target file.”) paragraph 0021).

Consider claims 13 and 18. Midgley et al. discloses a method comprising accessing at least one local replica catalog ((“The catalog process may include a

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mechanism for storing security metadata that is associated with the different versions of the target data files and that is representative of the users access rights for the versions of the target data file.") paragraph 0021).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff (US 6886035 B2) in view of Flanagan et al. (US 6243737 B1).

Consider claim 1. Wolff discloses an apparatus for managing data in a grid computing environment wherein a replication management module is configured to conduct data replication operations including directory-based replication operations ("CONFIGURATION DATABASE REPLICATOR MODULE 148: this module is

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responsible for replicating the copy of required records of the configuration database 120 (see FIGS. 5A-D) stored in node memory to other nodes as a result of the server configuration driver 156 calling it. It is called when a node first appears on the network, during a fail-over after a node failure, or when a node fails back. It guarantees every online node has an identical copy of the server configuration database.”) column 10 lines 11-19 (“In process 1704, a comparison is conducted between the time stamps for the last volume change, i.e. field 1382, and the last time the client conducted a dismount and mount in order to get a fresh copy of the file directory, i.e. field 1386. In decision process 1706, a determination is made as to whether the clients cached directory copy is stale. In the event this determination is in the negative, the client contains the most recent copy of the file directory resident on the volume.”) column 69 lines 47-55) and a screen driver module for presenting a GUI (“SCREEN DRIVER 170: This module is responsible for presenting a GUI of the OS and any application executing on the node that typically require human consumption of the visual information.”) column 11 lines 64-67). However, Wolff fails to disclose of a GUI being generated in response to a function. Flanagan et al. discloses a GUI module that generates one or more windows (“FIG. 6 is a flow diagram illustrating an overview of the logic implemented by the configuration module 44 of the present invention that allows the administrator of the transaction server 12 to configure client to host transaction mappings. FIGS. 20A-G illustrate the windows generated by the GUI module 42 of the direct transaction mapping program 38 which are used by the administrator to configure the client to host transaction mappings in accordance with the

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configuration module 44. As one of ordinary skill in the art will appreciate, a text based user interface or other interface may also be used without departing from the scope of the present invention.") column 8 lines 12-23).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a GUI module that generates one or more windows as taught by Flanagan et al. with an apparatus for managing data in a grid computing environment wherein a replication management module is configured to conduct data replication operations including directory-based replication operations and a screen driver module for presenting a GUI as taught by Wolff for the purpose of workflow management.

Consider claim 7. Wolff discloses a client-server system comprising data replication. However, Wolff fails to disclose a system comprising a graphical user interface. Flanagan et al. discloses a system wherein direct transactions with a collaborative computing environment are made via web-based interfaces ((“There have been various proposed methods for providing information residing on a host system to customers through the Internet, in particular, using the Web. A typical solution involves adding new software code on the host system that interfaces with Web-based users.”) column 1 lines 29-33).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a system wherein direct transactions with a collaborative computing environment are made via web-based interfaces as

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taught by Flanagan et al. with a client-server system comprising data replication as taught by for the purpose of inter-operability with grid resources.

Consider claims 8-10. Wolff, as modified by Flanagan et al., discloses a client-server system comprising data replication further comprising volume tables constructed from a previous search ((“Total_tables 14xx’ This value indicates the total number of Volume tables that have been configured and found at a previous search. This is the number that will automatically be expected to be found upon net startup.”) column 62 lines 12-16), a function for changing file attributes ((“Control is then passed to process 1370 where commands to get attributes of a file are managed by the metadata server. Control is then passed to process 1372 where commands to set the attributes of a file are managed by the metadata server.”) column 53 lines 13-17), and a publishing function of the replicated data ((“These results are replicated to each servers copy of the dynamic RAM resident configuration database 120A2-B2, the results are published and received by processes 104PC on server 104C, and the lock 120D1 is removed.”) column 8 lines 25-29).

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff (US 6886035 B2) as modified by Flanagan et al. (US 6243737 B1) in view of Midgley et al. (US 20030074378 A1).

Consider claims 2-4. Wolff, as modified by Flanagan et al. discloses a manageable collaborative computing system. However, Wolff, as modified by Flanagan et al., fails to disclose of a collaborative computing system further comprising a replica location service, at least one replica location index, and at least one local replica

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catalog. Midgley et al. discloses a replicating system comprising a catalog process that is capable of recording metadata representing the locations of the versions of the target files on the storage medium that creates an index for accessing the versions of a target file ("In a further aspect, the systems and methods described herein can include backup systems that include a long term storage system for recording target data files to a storage medium in response to the operation of the dynamic replication process, thereby storing versions of the target file on the storage medium. Additionally, in an optional environment the systems may include a catalog process that can record metadata that is representative of the locations of the versions of the target files on the storage medium to thereby create an index for accessing these versions of the target file. The catalog process may include a mechanism for storing security metadata that is associated with the different versions of the target data files and that is representative of the users access rights for the versions of the target data file.") paragraph 0021).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a replicating system comprising a catalog process that is capable of recording metadata representing the locations of the versions of the target files on the storage medium that creates an index for accessing the versions of a target file as taught by Midgley et al. with a manageable collaborative computing system as taught by Wolff, as modified by Flanagan et al., for the purpose of web-based grid computing comprising remote sites.

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Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolff (US 6886035 B2) as modified by Flanagan et al. (US 6243737 B1) in view of Zhang et al. (US 20050120353 A1).

Consider claims 5-6. Wolff, as modified by Flanagan et al. discloses a manageable collaborative computing system. However, Wolff, as modified by Flanagan et al., fails to disclose a grid system comprising a file transfer service. Zhang et al. discloses a data replication system consisting of ftp, grid ftp, http, rft, and file transfer ("The action manager 12, which is the engine of the framework, receives collaborative messages (or CxP) messages from a design partner side, which can be a Web portal. In each message, it contains meta data or annotations describing the documents to be exchanged, such as the file name, size, author, application to use to open the design file, etc. In addition, annotations can also specify integration activities to be performed, representing new application to be integrated, such as FTP, reliable file transfer (RFT) or an invocation to an legacy adaptor. Also, an alternative data source to the Action Manager, in addition to collaborative messages, is an RDF string.") paragraph 0024 ("The logical structure of ActivityChain ontology is shown in FIG. 3. The top-level entity is Class Activity. It has a DataTypeProperty securityHandler and an ObjectProperty actname. The ObjectProperty actname has a range which is Class Actname. And Actname is a collection which enumerates GridFTP,FTP, HTTP, Inv-service, Inv-Appl and Search-Annt.") paragraph 0045).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a data replication system consisting of

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ftp, grid ftp, http, rft, and file transfer as taught by Zhang et al. with a manageable collaborative computing system as taught by Wolff, as modified by Flanagan et al., for the purpose of reliable file transfer in a collaborative environment.

Claims 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Midgley et al. (US 20030074378 A1) in view of Zhang et al. (US 20050120353 A1).

Consider claims 14 and 19. Midgley et al. discloses a system for backing up data files comprising data replication. However, Midgley et al. fails to disclose a system comprising a file transfer service. Zhang et al. discloses a system comprising the file transfer protocols FTP and RFT ("The action manager 12, which is the engine of the framework, receives collaborative messages (or CxP) messages from a design partner side, which can be a Web portal. In each message, it contains meta data or annotations describing the documents to be exchanged, such as the file name, size, author, application to use to open the design file, etc. In addition, annotations can also specify integration activities to be performed, representing new application to be integrated, such as FTP, reliable file transfer (RFT) or an invocation to an legacy adaptor. Also, an alternative data source to the Action Manager, in addition to collaborative messages, is an RDF string.") paragraph 0024).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a system comprising the file transfer protocols FTP and RFT as taught by Zhang et al. with a system comprising data replication as taught by Midgley et al. for the purpose of file transfer in a grid environment.

Claims 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Midgley et al. (US 20030074378 A1) in view of Flanagan et al. (US 6243737 B1).

Consider claims 15 and 20. Midgley et al. discloses a system for backing up data files comprising data replication. However, Midgley et al. fails to disclose a system wherein a graphical user interface comprises a web page. Flanagan et al. discloses an interactive web-based solution (“There have been various proposed methods for providing information residing on a host system to customers through the Internet, in particular, using the Web. A typical solution involves adding new software code on the host system that interfaces with Web-based users.”) column 1 lines 29-33).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate an interactive web-based solution as taught by Flanagan et al. with a system comprising data replication as taught by Midgley et al. for the purpose of inter-operability in a collaborative environment.

Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Midgley et al. (US 20030074378 A1) in view of Wolf (US 6886035 B2).

Consider claims 21-23. Midgley et al. discloses a system for backing up data files comprising data replication. However, Midgley et al. fails to disclose a data replication system comprising replications operations that are conducted on catalog search results, a method for changing file attributes, or a publishing function. Wolff discloses a client-server system comprising data replication further comprising volume tables constructed from a previous search (“‘Total_tables 14xx’ This value indicates the total number of

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Volume tables that have been configured and found at a previous search. This is the number that will automatically be expected to be found upon net startup.") column 62 lines 12-16), a function for changing file attributes ("Control is then passed to process 1370 where commands to get attributes of a file are managed by the metadata server. Control is then passed to process 1372 where commands to set the attributes of a file are managed by the metadata server.") column 53 lines 13-17), and a publishing function of the replicated data ("These results are replicated to each servers copy of the dynamic RAM resident configuration database 120A2-B2, the results are published and received by processes 104PC on server 104C, and the lock 120D1 is removed.") column 8 lines 25-29).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a data replication system comprising replications operations that are conducted on catalog search results, a method for changing file attributes, and a publishing function as taught by Wolff with a data replication system as taught by Midgley et al. for the purpose of metadata catalog services in a grid computing environment.

Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Midgley et al. (US 20030074378 A1) in view of James (US 6910038 B1).

Consider claims 25-27. Midgley et al. discloses a replication server configured to generate at least one graphical user interface and conduct data replication operations including directory-based replication operations in response to user selections on the graphical user interface ("This system can provide a user interface that will allow the

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user to select a network consumption limit that is representative of the users selected limit for the amount of network bandwidth to be allocated to the backup replication process and the agent process.”) paragraph 0019 (“The replicated data structure 54 also provides directories, subdirectories and data records.”) paragraph 0040).

However, Midgley et al. fails to disclose a replication server comprising a replica location index. James discloses a method for host processing comprising a computing node having a replica location index, the replica location index configured to map logical names to a local replica catalog (“One embodiment of a record data structure is illustrated in FIG. 2B. Typical data fields include, as illustrated, the file parent of the data file. This information is used to map the file path to the data file in its destination location in order to locate the file on the destination CD. The volume label index is additional location identification information naming the source volume of the data file. The file size identifies the exact size of the file in bytes (or other suitable units of measure) to be used in calculating and identifying the destination location of the data and in making the determination which files will be sent to system cache memory during the writing operation. Files that are sent to system cache memory are further identified by the location in the system cache memory which holds the data file as described in greater detail below, and the file size is used to calculate that location. The logical block number identifies the destination location by the logical block where the data file will be written. The file time is the most recent modification time of the data file. This provides both the time and the date of the file, and can be used, for example, in both cataloging as well as differentiating between two identically named files. The file

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source path is the complete path to the data file in order to locate and read the file during the recording operation, and the file attributes include such information as whether the file is a system file, a read-only file, if it is a hidden file, and whether it is an archive file.") column 5 lines 3-27).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a method for host processing comprising a computing node having a replica location index, the replica location index configured to map logical names to a local replica catalog as taught by James with a replication server configured to generate at least one graphical user interface and conduct data replication operations including directory-based replication operations in response to user selections on the graphical user interface as taught by Midgley et al. for the purpose of grid hosting.

Consider claim 29. Midgley et al., as modified by James, discloses a system wherein a replication server is configured to invoke a replica location service associated with a grid ("The database can include pointers to the location of the different versions of the target files on the tape, thereby providing more rapid access to the location on the tape that includes the information a user may want to restore.") paragraph 0041).

Consider claim 30. Midgley et al., as modified by James, discloses a system wherein a replication server is configured to access at least one replica location index ("Additionally, in an optional environment the systems may include a catalog process that can record metadata that is representative of the locations of the versions of the

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target files on the storage medium to thereby create an index for accessing these versions of the target file.") paragraph 0021).

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Midgley et al. (US 20030074378 A1) in view of James (US 6910038 B1) and in further view of Wolff (US 6886035 B2).

Consider claim 28. Midgley et al., as modified by James, discloses a system for backing up data files comprising host processing methods. However, Midgley et al., as modified by James, fails to disclose a system comprising a replication server configured to conduct publishing operations, replication operations on search results, and change attributes associated with a file. Wolff discloses a system wherein a replication server is configured to conduct publishing operations ((“These results are replicated to each servers copy of the dynamic RAM resident configuration database 120A2-B2, the results are published and received by processes 104PC on server 104C, and the lock 120D1 is removed.”) column 8 lines 25-29), conduct replication operations on search results ((“Total_tables 14xx’ This value indicates the total number of Volume tables that have been configured and found at a previous search. This is the number that will automatically be expected to be found upon net startup.”) column 62 lines 12-16), and change attributes associated with a file ((“Control is then passed to process 1370 where

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commands to get attributes of a file are managed by the metadata server. Control is then passed to process 1372 where commands to set the attributes of a file are managed by the metadata server.") column 53 lines 13-17).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a system wherein a replication server is configured to conduct publishing operations, conduct replication operations on search results, and change attributes associated with a file as taught by Wolff with a system for backing up data files comprising host processing methods as taught by Midgley et al., as modified by James, for the purpose of a grid data mirroring package.

Conclusion

Any response to this Office Action should be faxed to (571) 273-8300 or mailed to:

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Hand-delivered responses should be brought to

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Mark Fearer whose telephone number is (571) 270-1770. The Examiner can normally be reached on Monday-Thursday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Mark Fearer
M.D.F./mdf
August 7, 2007



DAVID WILEY
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